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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
10/749,405	01/02/2004	Jeong Chae Youn	2950-0253P	2851	
2592 7590 05/05/2008 BIRCH STEWART KOLASCH & BIRCH PO BOX 747			EXAM	EXAMINER	
			THOMPSON, JR, OTIS L		
FALLS CHURCH, VA 22040-0747			ART UNIT	PAPER NUMBER	
			2619		
			NOTIFICATION DATE	DELIVERY MODE	
			05/05/2008	ELECTRONIC	

Please find below and/or attached an Office communication concerning this application or proceeding.

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Application No. Applicant(s) 10/749,405 YOUN, JEONG CHAE Office Action Summary Examiner Art Unit OTIS L. THOMPSON, JR 2619 -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --Period for Reply A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS. WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b). Status 1) Responsive to communication(s) filed on 21 February 2008. 2a) This action is FINAL. 2b) This action is non-final. 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) Claim(s) 1-20 is/are pending in the application. 4a) Of the above claim(s) _____ is/are withdrawn from consideration. 5) Claim(s) _____ is/are allowed. 6) Claim(s) 1-20 is/are rejected. 7) Claim(s) _____ is/are objected to. 8) Claim(s) _____ are subject to restriction and/or election requirement. Application Papers 9) The specification is objected to by the Examiner. 10) ☐ The drawing(s) filed on is/are: a) ☐ accepted or b) ☐ objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abevance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some * c) None of: Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No. Copies of the certified copies of the priority documents have been received in this National Stage

application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Response to Arguments

 Applicant's arguments filed February 21, 2008 with respect to the rejection(s) of claim(s) 13 and 20 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Applicant's amendments to claims 1 and 17.

DETAILED ACTION

Claim Rejections - 35 USC § 103

- 2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- Claims 1-4, 7, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomishima (US 6,032,276) in view of Youn (US 6,493,298 B1).
- Regarding claim 1, Tomishima discloses a method for control a play speed in an
 optical disc device, the method comprising the steps of:
 - Reading data from an optical disc (Column 3 lines 21-25, see "...reading operation...");
 - Determining whether or not the data reading in the step (a) is a sequential reading operation (Column 3 lines 21-25, see "...sequential reading operation...");

c. Lowering a data read speed of the optical disc if the data reading has failed, when the step (b) determines that the data reading is a sequential reading operation (Column 3 lines 21-39, see "...sequential reading operation...data is continuously read...until defective data is detected...reducing the revolution speed...", i.e. lowering the data read speed of the recording medium; Column 3 lines 28-31, see "...by reducing revolution speed...error is corrected [i.e. the data can be read]..."; therefore revolution speed is read speed].

Tomishima does not specifically disclose *selectively varying the current play speed* based on the results of the step (b), when the step (b) determines that the data reading is not a sequential reading operation.

However, Youn discloses a method for controlling reproduction speed of an optical disc in which when a data recorded in an optical disc is read, stored, and transmitted to a connected instrument through a digital interface, the speed in reading and reproducing the data recorded in the optical disc is controlled to be varied at a high speed or at a low speed according to a transmission rate or a residual amount of the stored data (Abstract). This method prevents the output image from temporarily pausing and displaying noisy images such as a flicker (Abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to incorporate the controlling of the reproduction speed of Youn into Tomishima in order to prevent temporary pausing and noisy images in the reproduced output image of media stored on an optical disc.

Regarding claim 2, Tomishima in view of Youn discloses lowering the data read speed without any read re-try when it is determined the data reading has failed (Tomishima, Column 1 lines 39-43, see "...increasing the reading speed of an optical disc by eliminating the retry operations...").

6. Regarding claims 3 and 4, Tomishima in view of Youn does not teach or suggest that the data reading is carried out at a read speed higher than the play speed, where the play speed is a predetermined basic speed and that the predetermined basic speed is a 1x speed, however, it is well known in the art that data reading of an optical disc is performed at a higher speed that the play speed because when the data is read, it is stored in a buffer and is transferred from the buffer to the display device. In order reproduce the media of the disc in a continuous fashion (i.e. without jitter or pauses), the data stored in the buffer has to played back at a speed such that it does not empty the buffer and have to wait for the following data to be read. Thus, in order to keep the playback continuous, data has to read faster than it is reproduced. Furthermore, it is well known in the art that the predetermined basic play speed of an optical disc is 1x (See Paragraph 0004 of Applicant's Specification).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to incorporate the teaching of the read speed being higher than the play speed and the predetermined basic play speed being 1x into the system of Tomishima in view of Youn in order to reproduce continuous playback of data of an optical disc without jitter or pauses in the playback.

- 7. Regarding claim 17, Tomishima discloses an optical device comprising:
 - d. A data reading unit configured to read data from an optical disc [Figure 1 label 3. see "PICK-UP");

- e. A determining unit configured to determine whether or not a current data reading from the optical disc is a sequential reading operation (Figure 1 label 4, see "SIGNAL/SERVO PROCESSOR"; 3 lines 21-25, see "...sequential reading operation...");
- f. A data read speed adjusting unit configured to lower a data read speed of the optical disc if the current data reading has failed, when the current data reading is a sequential reading operation (Figure 1 label 2, see "SPINDLE MOTOR"; Column 3 lines 21-39, see "...sequential reading operation...data is continuously read...until defective data is detected...reducing the revolution speed...", i.e. lowering the data read speed of the recording medium; Column 3 lines 28-31, see "...by reducing revolution speed...error is corrected [i.e. the data can be read]..."; therefore revolution speed is read speed).

Tomishima does not specifically disclose a play speed adjusting unit to selectively vary the current play speed based on the result from determining whether or not the current data reading is not the sequential reading operation.

However, Youn discloses a method for controlling reproduction speed of an optical disc in which when a data recorded in an optical disc is read, stored, and transmitted to a connected instrument through a digital interface, the speed in reading and reproducing the data recorded in the optical disc is controlled by an interface (I/F) unit (Figure 3 label 16) to be varied at a high speed or at a low speed according to a transmission rate or a residual amount of the stored data (Abstract). This method prevents the output image from temporarily pausing and displaying noisy images such as a flicker (Abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to incorporate the interface unit of Youn into Tomishima in order to prevent temporary pausing and noisy images in the reproduced output image of media stored on an optical disc.

- 8. Regarding claims 7 and 18, Tomishima in view of Youn discloses that the determination of whether or not the data reading has failed is based on whether or not a reading of data addresses from the optical disc has failed (Tomishima, Column 2 line 66 Column 3 line 5, see "...Sub-Q data...block position in the track of an optical disc where data to be read is located...error signal is output from signal servo processor if the data [i.e. Sub-Q data, i.e. data addresses] is not read..."].
- Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over
 Tomishima (US 6,032,276) as applied to claim 1 above, and further in view of Harold-Barry (US 5,995,462).
- 10. **Regarding claims 5 and 6,** Tomishima discloses the claimed invention above but fails to specifically disclose *storing the data read in the step (a) temporarily and* sequentially in a buffer; and wherein the data reading is stopped when an overflow occurs in the buffer, and is resumed from a position where the data reading has stopped previously after a predetermined time elapses or when the data in the buffer is reduced to a predetermined amount or less.

However, Harold-Barry discloses, referring to figure 3, that a CD controller 33 writes decoded data sequentially in the buffer memory 35 (FIFO buffer) (i.e. storing temporarily and sequentially in a buffer) after receiving data read from the disc by the

read head 32. The address generator 36 also produces sequential read addresses to allow the data to be read sequentially from the buffer memory 35. When the buffer memory becomes full, writing of data is inhibited for a time (i.e. predetermined time elapses) and then resumed from where the stop occurred (i.e. resumed from a position where the data reading has stopped previously) when the buffer memory is emptied by a given amount (i.e. reduced to a predetermined amount) after a fixed number of revolutions of the disc (Column 7 lines 47-53 and 59-63). This obviously prevents the buffer memory 35 from overflowing with data read from the optical disc.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to incorporate the teachings of Harold-Barry into the system of Tomishima in view of Youn in order to prevent overflowing of the buffer which contains data read from an optical disc.

- 11. Claims 8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomishima (US 6,032,276) in view of Youn (US 6,493,398 B1) as applied to claims 1 and 17 respectively above, and further in view of Kudora et al. (US 6,269,059 B1).
- 12. Regarding claims 8 and 19, Tomishima in view of Youn discloses that *data* addresses are sub-O information when the optical disc is a CD (Tomishima, Column 2 line 66 Column 3 line 5, see "...Sub-O data...block position in the track of an optical disc where data to be read is located...") but fails to specifically disclose that *data addresses* are ID information when the optical disc is a DVD.

However, Kudora et al. discloses that information that is recorded on a DVD-R is constructed of a plurality of data sectors. One data section is constructed of ID

information indicating the starting position of a data sector (Column 5 lines 35-40). This structure obviously allows for disc identification and error detection in a DVD.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to incorporate the teachings of Kudora et al. into the system of Tomishima in view of Youn in order to allow for disc identification and error detection in a DVD.

- Claims 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over
 Tomishima (US 6,032,276).
- 14. **Regarding claim 9,** Tomishima discloses a method for controlling a play speed in an optical device, the method comprising the steps of:
 - g. Reading data from an optical disc (Column 3 lines 21-25, see "...reading operation...");
 - h. Lowering a data read speed when the data reading has failed (Column 3 lines 21-39, see "...sequential reading operation...data is continuously read...until defective data is detected...reducing the revolution speed...", i.e. lowering the data read speed of the recording medium; Column 3 lines 28-31, see "...by reducing revolution speed...error is corrected [i.e. the data can be read]..."; therefore revolution speed is read speed].

Tomishima does not specifically disclose determining whether or not a play speed of the read data equals a predetermined basic speed and lowering the data read speed when the play speed equals the predetermined basic speed.

However, it is well known in the art that a basic play speed, or reproduction speed (i.e. transfer rate of data from a buffer of an optical disc device), is 1x (i.e. predetermined basic speed) (See Paragraph 0004 of Applicant's Specification). As Applicant discloses in paragraph 0005, reading data at a speed of 8x would overflow the buffer when data is being transferred from the buffer at a speed of only 1x. Since Tomishima teaches the reducing of the revolution speed (i.e. read speed; revolution speed is the speed at which the pick-up is able to read the data) in the presence of error, the combination of Tomishima and the basic play speed, which is well known in the art, renders the undisclosed teaching of the basic play speed by Tomishima obvious.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify Tomishima to specifically include the teachings of determining if the play speed equals a basic speed and lowering the read speed in such a case in order to prevent buffer overflow and to allow an optical disc device to retry a reading operation at a lower speed when it has failed at a higher speed.

15. Regarding claim 11, Tomishima discloses that the determination of whether or not the data reading has failed is based on whether or not a reading of data addresses from the optical disc has failed [Tomishima, Column 2 line 66 - Column 3 line 5, see "...Sub-O data...block position in the track of an optical disc where data to be read is located...error signal is output from signal servo processor if the data [i.e. Sub-O data, i.e. data addresses] is not read...").

- Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over
 Tomishima (US 6,032,276) as applied to claim 9 above, and further in view of Harold-Barry (US 5,995.462).
- 17. Regarding claim 10, Tomishima discloses the claimed invention above as well as lowering the data read speed, if the data reading has failed (Column 3 lines 21-39, see "...sequential reading operation...data is continuously read...until defective data is detected...reducing the revolution speed...", i.e. lowering the data read speed of the recording medium; Column 3 lines 28-31, see "...by reducing revolution speed...error is corrected [i.e. the data can be read]...", therefore revolution speed is read speed) but fails to specifically disclose that in step (a), the data reading is stored in a sequential fashion, and the data reading is stopped temporarily when a data overflow occurs in a buffer, and is resumed from a position where the data reading has stopped previously after a predetermined time elapses or when the data in the buffer is reduced to a predetermined amount or less; and the condition of lowering the data read speed, if the data reading has failed when the data reading is resumed from the stopped position in the step (a).

However, Harold-Barry discloses, referring to figure 3, that a CD controller 33 writes decoded data sequentially in the buffer memory 35 (FIFO buffer) (i.e. *storing in a sequential fashion*) after receiving data read from the disc by the read head 32. The address generator 36 also produces sequential read addresses to allow the data to be read sequentially from the buffer memory 35. When the buffer memory becomes full, writing of data is inhibited (i.e. *data reading is stopped temporarily*) for a time (i.e. *predetermined time elapses*) and then resumed from where the stop occurred (i.e.

resumed from a position where the data reading has stopped previously) when the buffer memory is emptied by a given amount (i.e. reduced to a predetermined amount or less) after a fixed number of revolutions of the disc (Column 7 lines 47-53 and 59-63). Harold-Barry further discloses that data is written into buffer memory at a rate that is greater than that at which it is read out (for example, twice the rate). Harold-Barry states that it is preferred that this doubled rate writing is maintained, but it would be possible to only use the faster rate (i.e. double rate) when recovering from shock interruptions (Column 7 lines 53-59). In other words, it is possible reduce the read speed when resuming writing after a buffer overflow occurs. Harold-Barry's method obviously prevents the buffer memory 35 from overflowing with data read from the optical disc and written to buffer memory.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to incorporate the teachings of Harold-Barry into the system of Tomishima in view of Youn in order to prevent overflowing of the buffer which contains data read from an optical disc.

- 18. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over

 Tomishima (US 6,032,276) as applied to claim 9 above, and further in view of Kudora et al. (US 6,269,059 B1).
- 19. Regarding claims 12, Tomishima discloses that *data addresses are sub-O information when the optical disc is a CD* (Tomishima, Column 2 line 66 Column 3 line
 5, see "...Sub-O data...block position in the track of an optical disc where data to be read

is located...") but fails to specifically disclose that data addresses are ID information when the optical disc is a DVD.

However, Kudora et al. discloses that information that is recorded on a DVD-R is constructed of a plurality of data sectors. One data section is constructed of ID information indicating the starting position of a data sector (Column 5 lines 35-40). This structure obviously allows for disc identification and error detection in a DVD.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to incorporate the teachings of Kudora et al. into the system of Tomishima in view of Youn in order to allow for disc identification and error detection in a DVD.

- 20. Claims 13, 15, 16, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Youn (US 6,493,298 B1) in view of Tomishima (US 6,032,276).
- 21. **Regarding claims 13 and 20,** Youn discloses a method and optical disc device for controlling a play speed in an optical disc device, the method comprising the steps of:
 - i. An identifying unit for identifying a transfer rate of data temporarily stored in a buffer (Column 4 lines 39-44, see "...data, temporarily stored in the buffer 15 is transmitted to the personal computer...transmission speed Vt...", i.e. transfer rate; Column 4 lines 39-44, see "...MICROCOMPUTER 18 [Figure 3] detects...Vt...Vr...", i.e. identifying unit);
 - j. A play speed adjusting unit for selectively varying a current play speed based on the results of step (a) (Column 4 lines 44-46, see "...reproduction speed Vr of the data read and reproduced...", i.e. play speed; Figure 4 labels S33 and

S35, Vt compared to Vr, labels S34 and S36, data reproduction speed changed based on S33 and S35, i.e. selectively varying a current play speed; Figure 4 label 16, see "I/F", i.e. play speed adjusting unit; Column 4, lines 10-15, see "...MICROCOMPUTER...interface unit 16 to variably control the reproduction speed..."].

Youn does not specifically disclose identifying whether or not address information of an optical disc is normally detected, in a sequential play mode for sequentially reading and reproducing data recorded on the optical disc.

However, Tomishima discloses a sequential play mode for sequentially reading and reproducing data recorded on the optical disc (Column 3 lines 21-25, see "...sequential reading operation...", i.e. sequential play mode). Tomishima further discloses identifying whether or not address information of an optical disc is normally detected (Column 2 line 66 - Column 3 line 5, see "...Sub-Q data...block position in the track of an optical disc where data to be read is located...error signal is output from signal servo processor if the data [i.e. Sub-Q data, i.e. data addresses] is not read..."). The features taught by Tomishima allow the method to provide error correction and maximum reading speed of recorded data on an optical disc (Abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to incorporate the teachings of Tomishima into Youn in order to provide error correction and maximum reading speed of recorded data on an optical disc.

22. Regarding claim 15, Youn in view of Tomishima does not specifically disclose that step/b) lowers the current play speed of the optical disc device when the identified data transfer rate corresponds to a predetermined basic speed and when the address information of the optical disc is abnormally detected.

However, Youn in view of Tomishima does disclose that when a transmission velocity is less than a reproduction velocity, the reproduction velocity is decreased (Youn, Figure 4 labels \$35 and \$36, where Vt is the transmission velocity, i.e. transfer rate, and Vr is the reproduction velocity, i.e. play speed). The predetermined basic speed is well known in the art because it is a basic speed for all optical disc devices. Youn in view of Tomishima further discloses the state of address information of the optical disc being abnormally detected (Tomishima, Column 2 line 66 - Column 3 line 5, see "...Sub-Q data...block position in the track of an optical disc where data to be read is located...error signal is output from signal servo processor if the data [i.e. Sub-Q data, i.e. data addresses] is not read..."].

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify the combination of Youn in view of Tomishima to specifically include the teaching of a predetermined basic speed since the predetermined basic is one that is well known to exist for all optical disc devices.

23. Regarding claim 16, Youn in view of Tomishima does not specifically disclose performing a re-try play control operation for temporarily stopping the data reading, and repeating, a predetermined number of times, an operation for reading a recording position where the data reading has failed when the data transfer rate does not correspond to the predetermined basic speed and when disc defects occur.

However, it is well known in the art to perform a retry operation to read a defected portion of a disc in order to try to recover data that is encoded on that portion

of the disc. Furthermore, this retry operation is not attempted endlessly, but only a specific number of times before the optical disc device determines that data is inaccessible

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify the combination of Youn in view of Tomishima in order to attempt to recover data that is encoded on a defected portion of a disc

- 24. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Youn (US 6,493,398 B1) in view of Tomishima (US 6,032,276) claim 13 above, and further in view of Kudora et al. (US 6,269,059 B1).
- 25. Regarding claim 14, Youn in view of Tomishima discloses identifying whether or not sub-queue information is normally detected when the optical disc is a CD (Tomishima, Column 2 line 66 Column 3 line 5, see "...Sub-Q data...block position in the track of an optical disc where data to be read is located...") but fails to specifically disclose that identifying whether or not disc identification information is normally detected when the optical disc is a DVD.

However, Kudora et al. discloses that information that is recorded on a DVD-R is constructed of a plurality of data sectors. One data section is constructed of ID information indicating the starting position of a data sector (Column 5 lines 35-40). This structure obviously allows for disc identification and error detection in a DVD.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to incorporate the teachings of Kudora et al. Art Unit: 2619

into the system of Tomishima in view of Youn in order to allow for disc identification and

error detection in a DVD.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to OTIS L. THOMPSON, JR whose telephone number is

(571)270-1953. The examiner can normally be reached on Monday to Thursday 7:30

am to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chirag Shah can be reached on [571]272-3144. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

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/Otis L Thompson, Jr./ Examiner, Art Unit 2619

April 14, 2008

Art Unit: 2619

/Chirag G Shah/ Supervisory Patent Examiner, Art Unit 2619